

What is claimed is:

1 1. A communication-status notification apparatus for a  
2 communication system in which at least one subscriber  
3 terminal is connected to a communication network via first  
4 gateway equipment, serving to create/analyze a packet as a  
5 voice data transmission medium, so that the subscriber  
6 terminal sends/receives voice data over the communication  
7 network,

8       said apparatus being adapted to be incorporated in  
9 the first gateway equipment and equipped with a  
10 communication-status-notification management section for  
11 notifying the subscriber terminal of a communication status  
12 in the communication network via the first gateway  
13 equipment, based on a processing status of the voice data  
14 in the first gateway equipment.

1 2. A communication-status notification apparatus  
2 according to claim 1, wherein said communication-status-  
3 notification management section includes:

4       a communication-status monitor/control section for  
5 monitoring/controlling the communication status of the  
6 communication network, based on the processing status of  
7 the voice data in the first gateway equipment; and

8       a communication-status notification section for  
9 notifying the subscriber terminal of the communication  
10 status monitored/controlled by said communication-status  
11 monitor/control section via the first gateway equipment.

1           3. A communication-status notification apparatus  
2 according to claim 2, wherein said communication-status  
3 notification section includes a notification-material  
4 storage section for storing at least one of voice,  
5 character and image as notification materials, and is  
6 operable to carry out the notification of communication  
7 status using the notification materials stored in said  
8 notification-material storage section.

1           4. A communication-status notification apparatus  
2 according to claim 2, wherein said communication-status  
3 monitor/control section includes a traffic-status  
4 monitor/control section for monitoring/controlling a  
5 traffic status in the communication network, based on a  
6 sending/receiving status of packets in the first gateway  
7 equipment.

1           5. A communication-status notification apparatus  
2 according to claim 4, wherein said traffic-status  
3 monitor/control section includes:  
4           a traffic-information request section for requesting  
5 each of one or more routers, which are included in the  
6 communication network, to send information about the  
7 traffic status in each said router to the first gateway  
8 equipment, by transmitting a request signal to each said  
9 router via the first gateway equipment;

10           a traffic-information obtaining section for obtaining  
11   the information about the traffic status, which has been  
12   sent from each said router in response to the request  
13   signal transmitted by said traffic-information request  
14   section, out of various data received by the first gateway  
15   equipment; and

16           a traffic-status analysis section for analyzing the  
17   traffic status of the communication network, based on the  
18   traffic-status information obtained by said traffic-  
19   information obtaining section.

1           6. A communication-status notification apparatus  
2   according to claim 4, wherein said traffic-status  
3   monitor/control section includes:

4           a test-packet sending section for sending one or more  
5   test packets via the gateway equipment to second gateway  
6   equipment, which is connected to the communication network  
7   and serves as a companion to the first gateway equipment  
8   for voice data transmission;

9           a test-packet retrieving section for retrieving the  
10   individual test packet, which has been sent back from the  
11   second gateway equipment, out of packets received by the  
12   first gateway equipment; and

13           a traffic-status analysis section for analyzing the  
14   traffic status of the communication network, based on the  
15   retrieving status of the test packets by said test-packet  
16   retrieving section.

1           7. A communication-status notification apparatus  
2 according to claim 4, wherein  
3           said traffic-status monitor/control section includes  
4 a communication-quality evaluation section for evaluating  
5 communication quality of voice data transmitted over the  
6 communication network, based on the traffic status  
7 monitored by said traffic-status monitor/control section,  
8 and  
9           said communication-status notification section is  
10 operable to notify the subscriber terminal of information  
11 about the communication quality of voice data evaluated by  
12 said communication-quality evaluation section.

1           8. A communication-status notification apparatus  
2 according to claim 7, wherein said traffic-status  
3 monitor/control section further includes a band-alteration  
4 request section, responsive to the communication quality of  
5 voice data evaluated by said communication-quality  
6 evaluation section, for requesting each of one or more  
7 routers, which are included in the communication network,  
8 to alter a band to be used for voice data transmission, by  
9 transmitting a request signal to each said router via the  
10 first gateway equipment.

1           9. A communication-status notification apparatus  
2 according to claim 2, wherein said communication-status